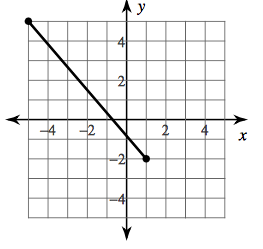
Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_ Per.: \_\_\_\_\_\_\_\_

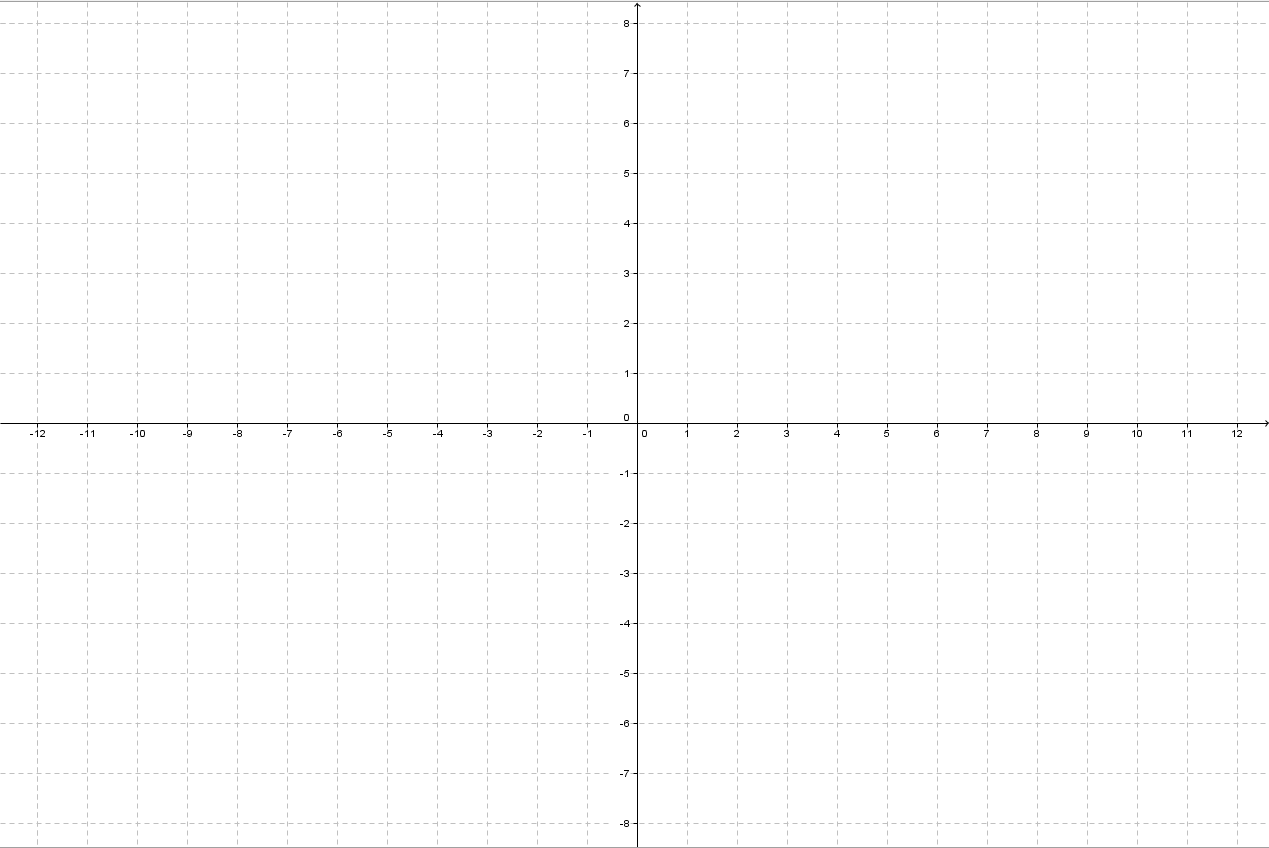
**Station 1 - Concept**

The distance formula is derived from the Pythagorean Theorem.

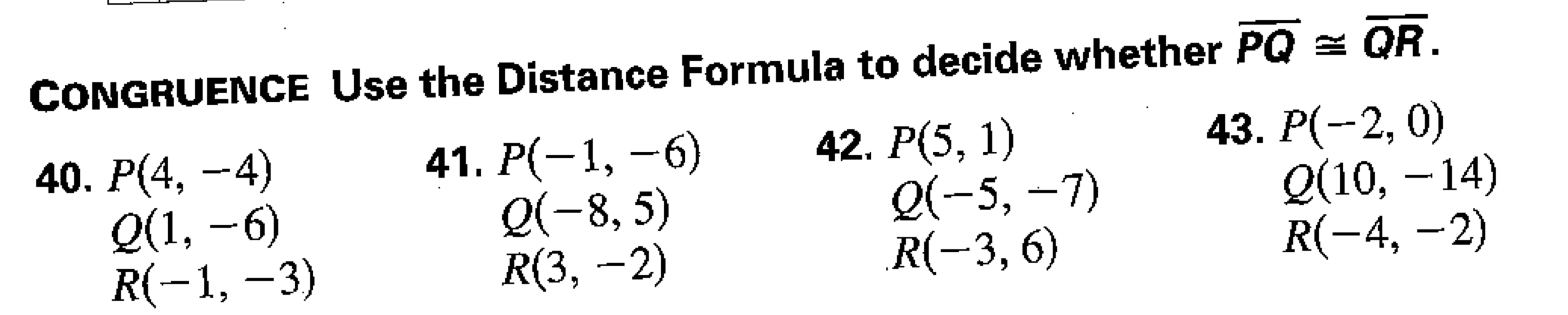


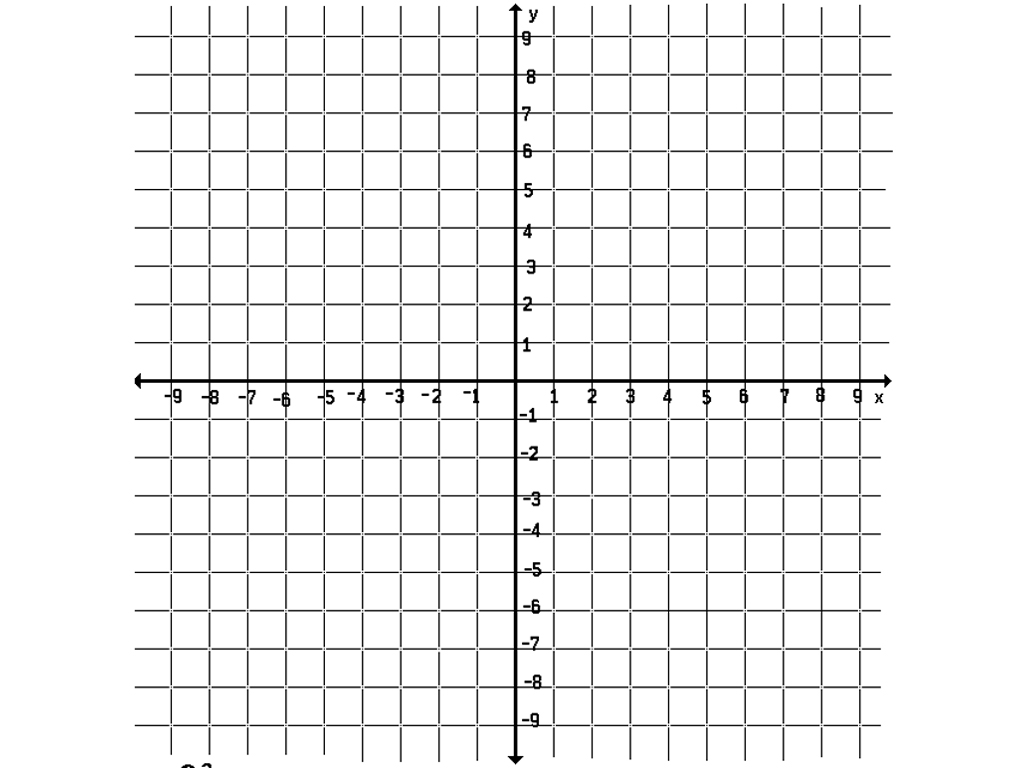
Segment partitioning

Given *M*(-4, 7) and *N*(12, -1), find the coordinates of point P on so that *P* partitions in the ration 1:7. Show all of your work and explain your method and reasoning.



**Station 2 – Distance Formula**





**Station 3 – Segment Partitioning**



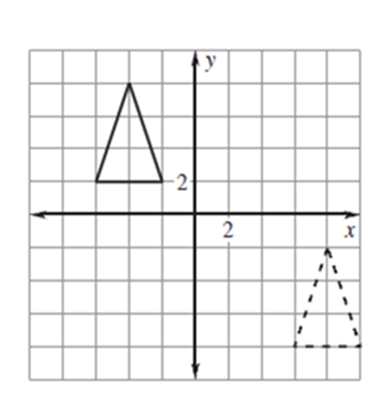
**Station 4**

4. Write the rule for the transformation below:



5. Write the rule for the transformation below: 6. Write the rule for the transformation below:

(dashed line triangle is the image)

**** 

**Putting it all together…**

1. Rotation, reflection, and translation are congruence transformations because…

2. A dilation is a similarity transformation because…

3. True or False: Two figures are congruent if they can occupy the same space after a series of transformations.

4. True or False: A pre-image is dilated to produce an image. The pre-image and image will be congruent figures.

5. True or False: A pre-image is dilated to produce an image. The pre-image and image will have the same angle measurements.

**ANSWER KEY**

**Station 2**

40. Congruent 41. Congruent 42. Not Congruent 43. Congruent

**Station 3**

1. (3, 0)
2. (-1, -2.4)
3. (1.2, 3.4)
4. (2.5, 0)

**Station 4**

4. reflection about the x-axis

5. translation: (x + 6, y – 5)

6. dilation by a scale factor of 2

**Putting it all together…**

1. Rotation, reflection, and translation are congruence transformations because **the pre-image and image are congruent: all corresponding side and angle measurements are the same.**

2. A dilation is a similarity transformation because **the pre-image and image are similar: all corresponding side measurements are in the same ratio and all angle measurements are the same.**

3. True or False: Two figures are congruent if they can occupy the same space after a series of transformations. **TRUE**

4. True or False: A pre-image is dilated to produce an image. The pre-image and image will be congruent figures. **FALSE; they will be similar**

5. True or False: A pre-image is dilated to produce an image. The pre-image and image will have the same angle measurements. **TRUE**